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Tasword will be suitable for 2068 work. Rod can then print all material with one printer. This procedure will require photocopies of all selected articles and programs for those who do not have those issues.

A motion was made to approve the December minutes as printed in the January PLOTTER. It was seconded and passed.

The college has issued a scheule of dates and time for the 3 months we will start meeting there in room #112. This will eliminate the uncertainty of meeting dates each month as we can be sure of the second Friday night. Once we get established at our new meeting place Dick will print up some bulletin board notices for posting at the college.

As ample time has been provided for paying dues, members who have not paid will not receive the March issue. We will not have extra copies on hand so this issue will not be available later.

Under new business, Rod announced that Gaylen Bench will discuss the use of the geneology computer program that can be used with the Latter Day Saints vast data storage system.

Various subjects were discussed during the meeting, Star Trek, components for a computer system for Jack's business use, scanners of various types.

Hopefully, we can develop a schedule of topics for meetings so we can post this information on various school bulletin boards.

Meeting adjourned at 9:45 PM.

Dick Wagner, Secretary



BITS & BYTES

by: Rod Gowen

In this column I try to bring you the latest and complete information and news available to me regarding the world of TS computing. One way that I can accomplish this is if I have the support of you, the reader, in collecting news that may be of interest to other readers. If you have any news, rumors or other tidbits of information that fits this description, why not send it along? We will be watching!

THE HACKER BITES THE DUST-

We have just received the "last" copy that will ever be published of this 5-year-old newsletter. Steve Sawcheck, the editor, states as the reason for the demise of the n/1 is lack of renewals and dwindling membership in the Las Vegas group. I can sympathize with the dwindling membership reason, but cannot do so for the "lack of subscription renewal" reason. It has been noted in THE PLOTTER as well as in several other TS newsletters that The Hacker had gone away from carrying much TS news over the past 3 years. It is still the editorial opinion of THE PLOTTER that any "TS" newsletter that does not devote at least 1/2 of its page space to TS news cannot expect to be accepted and supported by the TS community at large. We certainly respect Steve's efforts on behalf of the TS community for the first few years. We really do hate to see any publication cease, but we are also VERY aware of the costs and other problems involved. THE PLOTTER is experiencing some of the same problems. Our membership is down, but luckily we have managed to draw enough new subscriptions to carry us over, at least for 1 more year. Good luck in anything you do Steve! Take care!

DUES! DUES! DUES!-

Are you a member of CCATS? Are you SURE? If your dues are not paid by the time you read this, you are NOT a member! If you want to receive THE PLOTTER but cannot make meetings, you may subscribe for only \$12.00 per year by sending a check or money order to RMG Enterprises at the address on the back of this >>

newsletter. If you want to attend meetings by yourself or with others from your family, join in the great discussions, see demos of new (and old) technologies, learn to do new and exciting things with your computers and much, much more, then just send or bring your \$20 dues to the address on the back of this newsletter. We want you! We will do our best to help you.

GROUP INTEREST NEEDS A SPARK!

If our group is to keep the interest of current members as well as create enough interest from those curious about the group, we need to ensure that we can offer something interesting for them to latch onto. There was a bit of discussion at the January meeting about having each meeting night dedicated to a particular subject. It need not be structured, but the basic "theme" for the night will help focus our interest and, perhaps, even spark some discussion. Having a set "topic" of discussion may also help us to gain the interest of those not already in the group. Now what we need are topic ideas! C'Mon gang!

T/SNUG NEWS-

Well, we finally heard from the folks at T/SNUG! Bob Swoger gave us a call as soon as he received the last copy of THE PLOTTER to let us know that they had sent out issue #3 around Thanksgiving and that they were working on #4! I told him that it was strange, but we had not received #3 as of this writing. He said that he would look into it and get back to us. He told us that they are mailed with a company name on the envelope, not T/SNUG. This may be why several of the members did not know that they had, indeed, received their issue. Is there any way to have the T/SNUG stamp put on the mailing envelope? I am sure that it would be a big help. In our case, however, this was not the problem. We simply have not received our copies. I can say that at least 1 of our members will send in his personal membership dues if we receive #3 within a week or two. LATE NOTE!! - ON 1/13/92 WE RECEIVED A LARGE ENVELOPE CONTAINING 2 COPIES OF ZXIR CLIVE ALIVE! AND 2 COPIES EACH OF THE LAST 2 ISSUES OF THE

CHICAGO USER GROUP NEWSLETTER.
THANKS BOB!

"THE BEST OF"-PROJECT:

The project continues--- At the January meeting there was a bit of discussion on this subject, but no actual work was done. We will try to get some work done on it. We are still shooting for a publishing date or April or May, 1992 if at all possible. It will require a bit of work on the part of every member who can volunteer a few hours of their valuable time to the cause. We need proofreaders, data entry (word processor), and program testers. Can you help? If so, give Rod or Dick a call and let us know. We have 2 comb binder punches offered for our use so we will have no problem there. Rod Gowen is working on a cover design and Dick Wagner is working on page layout. A lot of work, but we can do it!

GENEALOGY--

Is a subject of our next meeting! Don't miss it! We are sure that you will find it an intriguing subject. Gaylen was not able to attend our January meeting, but we certainly are counting on him to show up next time! See you there Gaylen!

That's if for now!
See you next time. . .

A DEATH IN THE FAMILY

by: Rod Gowen

Some bad news for the computer world this month. One of the pioneers of the computer age died in early January. Rear Admiral Grace Hopper died at the age of 85.

Though you may not know exactly who she is, you definitely know some of the work she did. She has been in the computer field almost from the beginning. She co-invented COBOL, a business computer language. She was the first programmer of a full-scale digital computer, the MARK I. She is the first one known to have used the term "bug" in reference to a glitch in a computer program. She reportedly found a moth in a

computer that had flown into it and had died when it shorted out the system and the system crashed.

She has been featured in many college computer courses. I remember seeing her in one series that is still running on PBS called "The New Literacy" in which she explained how she went to the engineers for a "visible" explanation of a "nano-second" and they gave her an 8" piece of copper wire and told her that that was the distance that electrons travel (at the speed of light) in 1 NANO-SECOND.

If it had not been for pioneers such as Grace Hopper, we might not be where we are now. I am certain that she will be missed.

EPICYCLOIDS

An epicycloid is a type of curve that is formed when a smaller circle rolls around the outside of a larger circle. The curve is the trace of a single dot located on the smaller circle. This can be illustrated as a roller revolving around a stationary wheel, or a small gear revolving around a larger stationary gear.

Just visualize a painted gear tooth on the smaller gear. As the smaller gear revolves around the large gear, the painted tooth makes a path up and around, back to the stationary gear, but having progressed a fixed distance from the starting point each time the painted tooth contacts the fixed gear wheel.

The relationship of the radius of the larger gear and the smaller gear will determine the number of times the painted gear tooth makes contact with the larger gear in one complete roll around the big gear. If the gears are of the same radius then the rolling gear will make one complete revolution for the painted tooth to return to the starting point. If the larger gear has 2 times the radius of the smaller gear, the painted gear tooth will touch the larger gear exactly twice, once at the midpoint of the circumference of the larger gear,

and when the painted tooth returns to the starting point.

The curve produced by the painted tooth is called an epicycloid. This is different from the curve produced by an inner gear or roller revolving inside of a larger circle, which is called a hypocycloid. The program that follows produces epicycloid curves.

The material for this articles was developed from an article in the June 1984 issue of Creative Computing, authored by Sheldon and Florence Gordon. Changes were made to fit Sinclair Basic (2068) as the original program was for the TRS 80 Color computer with Extended basic.

To run the program the reader will need to decide on the ratios of the large circle and the small circle, in terms of the radii, such as 10:5, 8:2, 18:3, etc. Too large a radius will run off the screen. Numbers can be fractional or decimal, such as 10:2.5. Input your choices as called for, the large circle radius first.

Because of using the PLOT command in place of the original short line drawing method available in MS Basic (GWBASIC), the program produces dots in place of short lines. Thus the picture on the screen may be more difficult to interpret with complicated radii ratios and relative large steps.

Line 290 can be changed to smaller steps by changing ST to ST/2 which will take twice as long to plot the curve. Note that line 360 eliminates the display of the end of the run.

I like to know the origin of equations when I copy similar programs. The equations for the values of X and Y are as follows:

$$X=(A+B)*\cos(T)-B*\cos((A+B/B)*T)$$
$$Y=(A+B)*\sin(T)-B*\sin((A+B/B)*T)$$

where B is the radius of the outer rolling circle and A is the radius of the larger fixed circle. The larger circle does not visually appear on the screen but is the

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inner points or cusps of the path of
the small circle.

This program can be converted back
to the original by adding 4 lines:

```
245 SCREEN 1
270 LINE (H,V)-(H,V),PSET
340 LINE -(H,V),PSET
370 END
```

If you are using color then add it
to the screen command.

Dick F. Wagner

```
90 FOR T=1 TO 1200: NEXT T
100 CLS
110 INPUT "What is the large ra
dius ";AA: PRINT
120 INPUT "What is the small ra
dius ";BB: IF BB>=AA THEN GO TO
110
130 LET C1=AA+BB
140 LET C2=C1/BB
150 DEF FN X(T)=C1*COS (T)-BB*C
OS (C2*T)
160 DEF FN Y(T)=C1*SIN (T)-BB*S
IN (C2*T)
170 LET A=0: LET B=6.28*BB
180 LET N1=-C1-AA: LET N2=-N1
190 LET M1=N1: LET M2=N2
200 LET D=(N2-N1)/255: LET E=(M
2-M1)/191
210 CLS
220 LET NR=20*(AA+BB)
230 IF NR>400 THEN LET NR=401
240 REM DRAWS GRAPH
250 LET H=INT ((FN X(A)-N1)/D+.
5)
260 LET V=191-INT ((FN Y(A)-M1)
/E+.5)
280 LET ST=(B-A)/NR
290 FOR T=A+ST TO B STEP ST
300 LET X=FN X(T)
310 LET H=INT ((X-N1)/D+.5)
320 LET Y=FN Y(T)
330 LET V=191-INT ((Y-M1)/E+.5)
340 PLOT H,V
350 NEXT T
360 GO TO 360
```

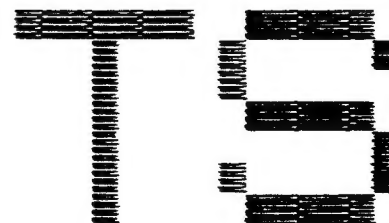
FROM THE EDITOR'S DESK

Another year has gone by and annual
dues are due. We sure hope that our
membership doesn't decrease any
more. Moving our meeting place to
Clackamas Community College hope-
fully will attract some students.
There will be the opportunity to
post meeting information on bulletin
boards. Also the expansion from
Sinclair Basic to MS DOS should be
more attractive to some of the
students. Being a community college,
there is a wide range of ages and
interests.

I believe these factors should draw
out our members to present projects,
give reports on programs, provide
assistance like we used to back in
the TS 1000 days. Gaylen Bench's
discussion on geneology programs at
the February meeting is a good start
in this direction. Consider the
shareware programs many of us use,
here is an opportunity to give
program information.

It just looks like the move to the
college campus is the right move for
us.

```
10 REM PROGRAM TO READ DATA
20 REM PORTLAND AREA TIMEX SIN
CLAIR USERS GROUP
30 REM AUGUST 1983
40 REM YOU SHOULD PRINT A LARG
E TS ON THE SCREEN
100 LET C=1
110 LET X$="06,06,06,06,06,06,0
6,06,06,06,06,06,07,07,07,08,08,
09,09,09,09,09,09,10,10,11,11,11
,12,12,12,12,12,12"
120 LET Y$="07,08,09,10,11,12,1
3,16,17,18,19,20,10,15,21,10,15,
10,16,17,18,19,20,10,21,10,15,21
,10,16,17,18,19,20"
130 FOR N=1 TO LEN (X$) STEP 3
140 LET X=VAL (X$(C TO C+1))
150 LET Y=VAL (Y$(C TO C+1))
160 PRINT AT X,Y;CHR$ (128)
170 LET C=C+3
180 NEXT N
```



the plotter

pc page

by: Rod Gowen

Hey! Here it is 1992 already and I have missed a couple of issues. I hope that you didn't mind my taking a break, but I am back now for a while. There is sure a lot to learn in the world of MS-DOS and it seems as though one closes ones eyes and you need to re-learn or even learn an entirely new set of rules for a new piece of software or hardware! It is a good thing that I enjoy it. If I did not, it would be very discouraging. This way I get to pass little goodies on to you!

Remember a few months ago when I was extolling the virtues of 4DOS? Well I want to tell you now about 4DOS VER. 4.0! I recently received my upgrade copy and was amazed at all of the new features! It is now completely compatible with MS-DOS 5.0 and together they are even better!

Perhaps the two most powerful and useful commands that have been incorporated into MS-DOS 5.0 are UNDELETE and UNFORMAT. After having tested each of these for a while, I can report that they work great! These two alone are worth the cost of the upgrade to me!

I am not trying to say that these are the only two commands worthwhile, as there are too many new and revised commands to cover in one column here. Hopefully, I will have time to cover more of them in future issues. In this issue I will try to cover a few of the features available to you in these two packages.

The UNFORMAT command works in conjunction with the MIRROR command. As the disk is formatted, an image of the FAT and partitioning tables is saved. If, after the format is complete, you find that you needed something that was on the disk, you can usually retrieve it by using the UNFORMAT command. Let's say I format a 1.44M diskette in drive A: and find that I should have saved off some of the data before I wiped it clean, I put the disk pack into drive A: and type in the command: UNFORMAT A:. If the disk was not completely full, I usually have my data back in under a minute! At first I could not believe it! I had tried Norton's UNFORMAT in the past and had been very disappointed at having to wait for almost 5 minutes one time for it to recover a 1.44M disk! I have other UNFORMAT commands with other toolkits as well, but they all seem to work on hard drives only.

The UNDELETE command works much the same as those that I have had occasion to use in the past. It comes up with a list of files where you have to fill in the first letter (if you know it!). It is much better than losing a valuable data file though.

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That's about all I have room for this month. I sure wish some of the readers would let me know what it is you need help with or would like to see explained! I KNOW that I do not now all that there is to know about MS-DOS and I am always finding new ways to do things and new things to do. I am sure that you are in the same boat. I am more than happy to do what I can IF I only know what it is you need help with. How about some article ideas?

```

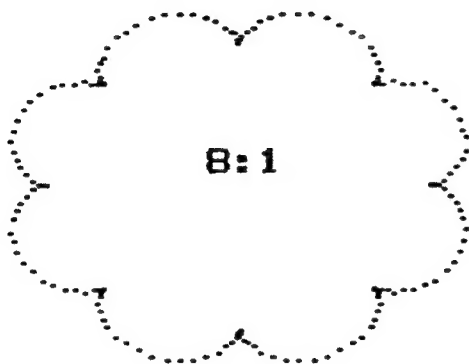
10 REM IBM MOUSETRAP
20 REM CREATIVE COMPUTING MAGAZINE, JUNE 1984
30 REM by Michael Crighton
40 REM program based on the keyboard scan rate. My computer appeared to scan at
the rate of about 1000 per second.
50 REM enter a word and see if another person can duplicate that word with close
to the same typing rate. The computer will tell you if it is the same, nearly
the same, or not close. The numbers will give the difference.
60 REM between 20 and 60 is acceptable, above 60 makes the typist a fake!
70 CLEAR: DIM N1(30), N2(30), D(30)
80 T=1: REM TABLE VALUE
90 OK=20!: REM ACCEPTANCE LEVEL
100 NG = 60!: REM REJECTION LEVEL
110 CLS: PRINT "ACCEPTANCE LEVEL = "; OK; " REJECTION LEVEL = "; NG
120 PRINT: PRINT
130 PRINT "LOGON: NAME? ";: GOSUB 430
140 FOR X = 1 TO T
150 N1(X)=D(X)
160 NEXT
170 N1$=N$
180 REM-----REPEAT-----
190 T=1
200 PRINT: PRINT
210 PRINT "LOGON: NAME? ";: GOSUB 430
220 FOR X=1 TO T
230 N2(X)=D(X)
240 NEXT
250 N2$=N$
260 REM-----CHECKER-----
270 PRINT
280 IF N1$<>N2$ THEN PRINT "SORRY, NO MATCH": GOTO 410
290 FOR X=2 TO LEN(N1$)+1
300 Z=ABS(N1(X)-N2(X))
310 SZ=3-Z: SC=SC+SZ
320 NEXT
330 PRINT
340 L=LEN(N$): SF=ABS(SC/L)
350 SF$=STR$(SF)
360 PRINT USING "\ \"; SF$; " ";
370 IF SF>NG THEN 400
380 IF SF<NG AND SF>OK THEN PRINT "IDENTITY UNSURE BUT ACCEPTED": GOTO 410
390 IF SF<OK THEN PRINT "IDENTY CONFIRMED": GOTO 410
400 PRINT "YOU ARE A FAKE!"
410 END
420 REM-----MOUSETRAP ITSELF-----
430 N$=" "
440 CT=0: REM RESET COUNTER
450 K$=INKEY$: IF K$="" THEN CT=CT+1: GOTO 450
460 REM KEYSTROKE OCCURED
470 D(T)=CT
480 A$=K$: PRINT K$;: IF K$=CHR$(13) THEN RETURN
490 N$=N$+A$: T=T+1: GOTO 440

```

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ML/PD:12/92